REMARKS

Claims 1, 2 and 5-36 are pending in this application, however, claims 5-14 and 19-26 are withdrawn from consideration. Thus, claims 1, 2, 15-18 and 27-36 are under consideration in this application. Claims 1, 15, 29, 31, 33 and 35 are independent claims. By this amendment, claims 1, 2, 15, 16 and 33 are amended. Reconsideration in view of the above amendments and following remarks is respectfully solicited.

I. ALLOWABLE SUBJECT MATTER

The Office Action indicates that claims 17 and 18 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, applicant respectfully submits that all of claims 1, 2, 15-18 and 27-36 are allowable, for at least the reasons set forth below.

II. THE DRAWING OBJECTIONS ARE OBVIATED

The Office Action asserts that the drawings are objected to because the "second image retrieval executing unit" as claimed in claim 16 is not shown in the drawings. This objection is respectfully traversed.

Applicant respectfully submits that the amendment to claim 16 obviates this objection. Accordingly, withdrawal of the objection to the drawings is respectfully solicited.

III. **THE CLAIMS SATISFY THE REQUIREMENTS OF**
     35 U.S.C. §112, 2nd PARAGRAPH

The Office Action rejects claims 2, 15-18, 33 and 34 under 35 U.S.C. §112, 2nd paragraph. This rejection is respectfully traversed.

Applicant respectfully submits that the amendment to claims 2, 15, 16 and 33 obviates the rejection of claims 2, 15-18, 33 and 34 under 35 U.S.C. §112, 2nd paragraph. Accordingly, withdrawal of the rejection of claims 2, 15-18, 33 and 34 under 35 U.S.C. §112, 2nd paragraph is respectfully solicited.

IV. **THE CLAIMS DEFINE PATENTABLE SUBJECT MATTER**

The Office Action rejects:

(1) claims 1, 15, 27, 31, 33 and 34 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,642,174 to Kazui et al. (hereafter Kazui);

(2) claim 35 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,754,233 to Takashima (hereafter Takashima);

(3) claims 2, 16, 28 and 32 under 35 U.S.C. §103(a) as being unpatentable over Kazui;

(4) claim 29 under 35 U.S.C. §103(a) as being unpatentable over Takashima; and

(5) claims 30 and 36 under 35 U.S.C. §103(a) as being unpatentable over Takashima in view of Kazui.

These rejections are respectfully traversed.

Applicant respectfully submits that both Kazui and Takashima, either individually or in combination, fail to teach or suggest each and every feature as set forth in the claimed invention.

An aspect of the present invention is to provide an image retrieval information storing apparatus capable of immediately meeting a request for switching featured frames during the process of retrieval and capable of extracting a featured frame adaptively, because the apparatus stores frame feature values which are used for extracting featured frames. Furthermore, the frame feature value is generated based on coding information in the image data. When there is a new request for extracting a frame feature value, the method for generating the frame feature value is adaptively changed during the process of retrieval.

Claim 1 recites, *inter alia,* an image retrieval information storing apparatus including a frame feature value generating unit. The frame feature value generating unit generates a frame feature value. The frame feature value represents a numerical representation of a frame feature based on image data. Also, a frame feature value storing unit is for storing the frame feature value corresponding to the image data. The frame feature value storing unit being connected to said frame feature value generating unit.

Claim 15 recites, *inter alia,* an image retrieval information storing apparatus including a frame feature value generating unit for generating a frame feature value for each frame. The frame feature value is a numerical representation of a frame feature based on image data, and the frame feature value is used as a reference for the determination of a featured frame. A frame feature value storing unit is for storing the frame feature value corresponding to the image data. The frame feature value storing unit is connected to the frame feature value generating unit.

Claim 29 recites, *inter alia,* an image retrieval information storing apparatus including a coding information reading unit for

reading motion vector information from coded image data. A frame feature value generating unit, connected to the coding information reading unit, calculates statistics of motion vectors of the coded image data based on the motion vector information and generates a motion vector frame feature value. The frame feature value is a numerical representation of frame feature.

Claim 31 recites, *inter alia,* an image retrieval information storing apparatus including a coding information reading unit for reading prediction mode information from coded image data. A frame feature value generating unit, connected to the coding information reading unit, counts a number of blocks coded in accordance with respective prediction methods for a frame and outputs a prediction mode frame feature value that is a numerical representation of frame feature. A frame feature value storing unit, connected to the frame feature value generating unit, stores the prediction mode frame feature value corresponding to the coded image data.

Claim 33 recites, *inter alia,* an image retrieval information managing apparatus including a frame feature value reading unit for reading one or more frame feature values which are numerical representations of frame feature corresponding to one or more frames of image data and which are included in an image retrieval information. A frame feature value managing unit, connected to the frame feature value reading unit, manages the frame feature values in a form which can be used for image retrieval.

Claim 35 recites, *inter alia,* an image retrieval information managing apparatus including a frame feature value reading unit for reading one or more frame feature values which include motion vector frame feature values, based on statistics of motion vectors of image data and which are included in an image retrieval

information. A frame feature value managing unit, connected to the frame feature value reading unit, manages the frame feature values in a form that can be used for image retrieval.

In contrast to the present invention, both Kazui and Takashima disclose the process of extracting a featured frame, i.e., a scene change frame, independently from the image retrieval process. In addition, the method for determining the featured frame is fixed in both Kazui and Takashima whereas the method in the claimed invention is adaptively changed in response to a request for extracting a new featured frame.

Furthermore, Kazui fails to disclose storing a frame feature value for each frame. Kazui merely stores a multiplexed data representing the coded signal multiplexed with the scene information. Applicant respectfully submits that this multiplexed data of Kazui is significantly different from the frame feature value in the claimed invention.

Takashima discloses a compression encoding apparatus for compressed coded data. However, like Kazui, Takashima fails to disclose frame feature values being adaptively used for retrieving a featured frame. Takashima's scene change detector fixedly detects change points of an input signal and fails to adaptively change the points.

Furthermore, in the "scene change detecting device 11" (see Fig. 2 of Kazui) the number of blocks with respect to each predictive process in one frame is counted. The scene change position is identified based on the count value, and the frame number of the frame immediately following the identified scene change position is outputted. An output frame number is recorded as retrieval information in the "storage device 13" (see Fig. 2 of Kazui), and utilized upon request of the "digital moving picture

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display apparatus 20".

In Takashima, the "scene change detection device 101" (see Fig. 11 of Takashima) detects a scene change based on the sum of absolute values of residuals obtained when a motion vector is detected by an ME circuit 103 (see Fig. 11 of Takashima). The detected scene change information is outputted, and the output scene change information is utilized for rate control. However, the scene change information is not recorded or used as the retrieval information.

Furthermore, the methods of detecting scene change in both Kazui and Takashima are fixed and are not changed.

In contrast to Kazui and Takashima, in the present invention three different pieces of image retrieval information, i.e., coding information, frame feature value, and index information, are outputted, recorded and adaptively utilized for retrieval. Specifically, the "frame feature value" represents a feature of each frame by a numerical value and serves as a reference for finding the featured frame that is to be outputted and recorded as retrieval information according to claim 1, managed as retrieval information according to claim 33, and utilized for retrieval according to claim 15.

In the present invention, the "frame feature value" is outputted upon request, and the method of detection (method of extracting a featured frame) is changed so that various featured frames are outputted.

Applicant respectfully submits that even if the "frame feature value" of the present invention corresponds with "the number of blocks with respect to each predictive process in one frame" of Kazui or the "sum of absolute values of residuals" of Takashima, these aforementioned features of the cited art are intermediate

data used in fixed methods of detecting a scene change, which are not outputted, and are not recorded or utilized for detecting various featured frames.

Applicant further respectfully submits that the Office Action is erroneously interpreting the scene change detecting device of Kazui. For example, the Office Action is asserting that the "scene change information" outputted from the "scene change detecting device 11 of Kazui corresponds to not the claimed "index information" but the claimed "frame feature value." Accordingly, the scene change detecting device 11 and the data multiplexing device 12 of Kazui are interpreted as the "frame feature value generating unit" and the "storage device 13" of Kazui is interpreted as the claimed "frame featured value storing unit." Thus, based on the Office Action's interpretations, the "index information" is the "index image" which is generated from the "scene change information" and displayed on the screen at the time of retrieval. As a result, based on the Office Action's interpretations, the digital picture display apparatus 20 of Kazui is erroneously understood by the Office Action as an "index information generating unit." Such an interpretation by the Office Action contradicts the descriptions of "a frame feature value as being a numerical representation of a frame feature" and an "index information as being positional information of the featured frame" as set forth in the claimed invention. Accordingly, applicant respectfully submits that the Office Action is clearly misunderstanding the present invention.

According to MPEP §2131, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. Of California*, 814

F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the …claims." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913 (Fed. Cir. 1989). The elements must be arranged as required by the claims, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicant respectfully submits that the Office Action has failed to establish the required *prima facie* case of anticipation because the cited references, Kazui and Takashima, fail to teach or suggest each and every feature as set forth in the claimed invention.

Applicant also respectfully submits that the combination of Kazui and Takashima fail to teach or suggest each and every feature as set forth in the claimed invention.

Applicant respectfully submits that not only does the references fail to teach or suggest each and every feature as set forth in the claimed invention, but that one of ordinary skill in the art would not have been motivated to combine/modify the teachings of Kazui and Takashima because there is no teaching or suggestion in any of the references regarding how or why one would modify such systems to arrive at the claimed invention.

Applicant respectfully submits that the independent claims are allowable over Kazui and Takashima, either individually or in combination, for at least the reasons noted above.

As for each of the dependent claims not particularly discussed above, these claims are also allowable for at least the reasons set forth above regarding their corresponding independent claims, and/or for the further features claimed therein.

Accordingly, withdrawal of the rejection of claims 1, 2, 15,

16, and 27-36 under 35 U.S.C. §102(b) and 103(a) is respectfully
solicited.

V. CONCLUSION

In view of the foregoing, Applicant respectfully submits that
the application is in condition for allowance. Favorable
reconsideration and prompt allowance are earnestly solicited.

Applicant respectfully petitions under the provisions of 37
C.F.R. §1.136(a) and §1.17 for a two (2) month extension of time
in which to respond to the Examiner's Office Action. The
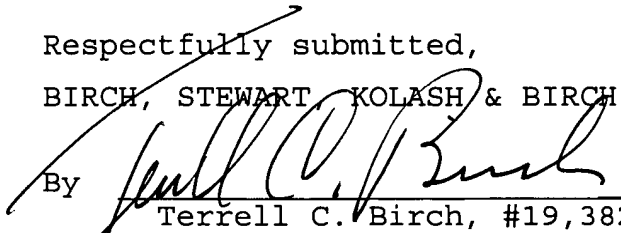appropriate Extension of Time Fee is attached hereto.

Should the Examiner believe that anything further would be
desirable to place this application in better condition for
allowance, the Examiner is invited to contact Carolyn T.
Baumgardner (Reg. No. 41,345) at (703) 205-8000 **to schedule a
Personal Interview**.

If necessary, the Commissioner is hereby authorized in this,
concurrent, and future replies, to charge payment from or credit
any overpayment to Deposit Account No. 02-2448 for any additional
fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17;
particularly, the extension of time fees.

Respectfully submitted,

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TCB/CTB/mpe
0033-0630P
Attachment: Version with Markings to Show Changes Made

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VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1.   (Twice Amended) An image retrieval information storing apparatus, comprising:

a frame feature value generating unit for generating a frame feature value which is a numerical representation of a frame feature based on image data; and

a frame <u>feature</u> value storing unit for storing said frame feature value corresponding to said image data, the frame <u>feature</u> value storing unit being connected to said frame feature value generating unit.

2.   (Twice Amended) The image retrieval information storing apparatus according to claim 1, further comprising:

an index information generating unit for determining a [feature] <u>featured</u> frame among said image data and for generating index information which is positional information of said featured frame; and

an index information storing unit for storing said index information, the index information storing unit being connected to said index information generating unit.

15. (Twice Amended) An image retrieving apparatus, comprising:

an index information generating unit for receiving a frame feature value which is a numerical representation of a frame feature corresponding to a frame of image data, for determining a

featured frame among said image data based on said frame feature value in accordance with a request for extracting a featured frame, and for generating index information which is positional information of said featured frame; and

a [first] image retrieval executing unit connected to said index information generating unit, for transmitting said request for extracting [a] said featured frame to said index information generating unit, for receiving said index information from said index information generating unit, for receiving said image data from [outside] an external source, and for outputting a frame specified based on said index information.

16. (Twice Amended) The image retrieving apparatus according to claim 15, wherein said [first] image retrieval executing unit [includes a second image retrieval executing unit] is connected to said index information generating unit, [the second image retrieval executing unit] transmitting said request for extracting a featured frame to said index information generating unit, receiving said index information from said index information generating unit, and also receiving said image data and index information from [outside] an external source, and outputting a frame specified based on said index information received from said index information generating unit [and] or said index information from [outside] said external source.

33. (Amended) An image retrieval information managing apparatus, comprising:

a frame feature value reading unit for reading one or more frame feature values which are numerical representations of frame feature corresponding to one or more frames of image data and

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which are included in an image retrieval information; and

a frame feature value managing unit, connected to said frame feature value reading unit, for managing said frame feature values in a form which can be used for image retrieval.